BEFORE THE

# Federal Communications Commission

WASHINGTON, D.C.

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| **In the Matter of** | ) | |
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| **Implementation of Section 273 of the Communications Act of 1934, as amended by the Telecommunications Act of 1996** | ) | **CC Docket No. 96-254** |
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## COMMENTS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION

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## TABLE OF CONTENTS

## SUMMARY

In its comments in response to the FCC's Notice of Proposed Rulemaking, TIA urges the Commission to implement Section 273 of the Communications Act in a manner which ensures that the benefits of a fully competitive equipment marketplace are preserved. The potential risks to competition arising from the BOCs' entry into manufacturing are real and substantial, given the current immature state of competition in the BOCs' local exchange markets. Indeed, in light of structural changes within the industry which include the impending consolidation of several of the industry's leading equipment purchasers, the risks to competition arising from BOC entry into manufacturing are likely to increase in the near term, rather than diminish. TIA believes it is therefore critical to ensure that the manufacturing safeguards established in Section 273 and other relevant sections of the Act are implemented and enforced in a manner that effectively constrains the potential for cross-subsidization and discrimination in procurement, standards-setting and certification activities, and in the disclosure of information that affects the ability of manufacturers to design and sell equipment for use in or connection to BOC networks.

TIA's positions on specific issues addressed in the Commission's NPRM are as follows:

### BOC MANUFACTURING AUTHORIZATION

- Timing of BOC Entry: Pursuant to Section 273(a), the BOCs are allowed to manufacture telecom equipment and CPE through a separate affiliate as soon as they receive authorization to provide interLATA services in any state within their region. Since the BOCs will retain their dominant position in local services for some time after they are granted authority to manufacture, it is essential that the Commission adopt strong, well-crafted rules implementing the competitive safeguards established in Section 273 and related provisions.

- Joint BOC Manufacturing: The NPRM identifies some but not all of the relationships prohibited under Section 273(a). This provision also bars joint manufacturing between or among affiliates of unaffiliated BOCs, as well as joint manufacturing involving an affiliate of one BOC and otherwise unaffiliated BOCs or RBOCs.

- Definition of Manufacturing: TIA agrees that the term manufacture should be construed in a manner consistent with the definition of "manufacturing" adopted under the MFJ, which includes not only fabrication, but also the design and development of hardware and software that is integral to telecommunications equipment and CPE. In light of the increasing competitive significance of software, TIA urges the Commission to clarify which types of software activities constitute "manufacturing" and must be conducted through the BOC's separate affiliate.

## BOC COLLABORATION, RESEARCH, AND ROYALTY AGREEMENTS

- "Close Collaboration": Section 273(b)(1) allows a BOC to interact with a manufacturer to the extent necessary to ensure effective interconnection and interoperation of products designed by the manufacturer for use in order connection to the network. This provision does not allow a BOC to engage directly in the manufacturing design process, nor does it exempt a BOC from the information disclosure requirements and other safeguards established in sections 272 and 273.

- BOC Research/Royalty Arrangements: Consistent with the statutory scheme, a BOC is permitted to engage in basic and applied research of a "generic" nature. Product-specific design and development may be undertaken only through the separate affiliate. A BOC may license intellectual property arising from its generic research activities to manufacturers, on a reasonable, non-discriminatory basis, and receive royalty fees which are not tied to the BOC's own purchases.

## INFORMATION DISCLOSURE REQUIREMENTS

- The FCC's existing information disclosure requirements are not intended to address the needs of manufacturers seeking to design equipment for use in, or in connection with BOC networks, and are therefore inadequate to satisfy the requirements of Section 273(c).

- TIA believes that the Section 273(c) safeguards apply to all BOCs, irrespective of whether they have been authorized to engage in manufacturing, through a separate affiliate, pursuant to Section 273(a).

- TIA urges the FCC to adopt rules implementing the requirements of Section 273(c) and other relevant provisions that ensure the timely and non-discriminatory disclosure of

information that may affect the ability of manufacturers to design and market telecommunications equipment or CPE.

- TIA's proposed rules address the timing, method, and content of disclosures, and are designed to provide manufacturers with full and complete information concerning the protocols and technical requirements for connection with and use of the BOC's local network facilities and any changes thereto, in a manner consistent with the disclosure and non-discrimination requirements of Section 273(c), Section 273(e), Section 272(c)(1) and other relevant provisions.

- In order to reduce the risks to competition arising from advance disclosures of network-related information, the Commission should exercise its authority under Section 273(c)(3) to adopt rules which require a BOC that discloses any such information to one manufacturers to make such information available to all manufacturers on equal terms and conditions.

- Assuming that the potential for BOC discrimination is contained in this manner, TIA believes that it may be appropriate to utilize the "make-buy" point, at least initially, as a basis for determining timing of disclosures required pursuant to Section 273(c)(1). TIA's proposed rules generally require disclosure of network changes at the make/buy point, but at least 12 months prior to implementation; where changes can be implemented on less than 12 months notice, disclosure would be required at the make/buy point, but at least 6 months before implementation. TIA also supports an appropriately-crafted exemption for bona fide equipment trials.

- TIA's proposed rules implementing Section 273(c)(1) would require, at a minimum, that each BOC disclose information concerning all protocols and technical requirements for connection with and use of any of the BOC's designated points of interconnection and all BOC network elements, including information relating to 1) connections between BOC network elements, and 2) connections between customer premises equipment and BOC network elements.

- TIA supports adoption of rules providing for the disclosure of any proprietary or confidential information which falls within the scope of Section 273(c) pursuant to an appropriate non-disclosure agreement.

- TIA agrees with the Commission's tentative conclusion that Section 273(c)(2) bars the BOCs from disclosing information which is required to be disclosed under Section 273(c)(1) unless it is publicly available, i.e., filed with the Commission.

## BELLCORE; STANDARDS/CERTIFICATION PROVISIONS

- TIA takes exception to the FCC's tentative conclusion that, based on the limited information before it, the announced sale of Bellcore to SAIC will operate to free Bellcore from the manufacturing restriction imposed under Section 273(d)(1). TIA urges the Commission to defer making a determination on this issue until full and complete information is available, both with regard to the sale to SAIC and concerning future relationship(s) between and among the BOCs, Bellcore, SAIC, and the new National Telecommunications Alliance (NTA).

- TIA agrees with the Commission's tentative conclusion that to the extent Bellcore is permitted to engage in manufacturing, it must do so in a manner consistent with the "separate affiliate" requirements and other safeguards established in Section 273(d).

- Whether or not it is permitted to manufacture, Bellcore remains subject to the provisions of Section 273(d)(2) regarding the protection of proprietary information submitted by manufacturers during the standards and certification process.

- TIA urges the FCC to adopt the definition of the term "standards" proposed by TIA, which is based on the definition proposed by OMB in its revised Circular No. A-119, with certain modifications designed to reflect the specific requirements and underlying purposes of Section 273(d).

- TIA believes that Section 273(d) was not intended to address the development of standards by accredited SDO's or the interoperability testing and related activities of individual manufacturers, and urges the Commission to define the term "standards" and clarify the term "certification," in order to ensure that Section 273(d) is not inappropriately applied to such entities.

- Consistent with the requirements of Section 273(d)(4), the FCC should make it clear that non-accredited SDOs that are engaged in the development of "industry-wide" standards or generic requirements must adopt funding arrangements that are reasonable, non-discriminatory, and non-exclusionary. In this regard, TIA urges the use of a "sliding-scale" approach to funding, a "one vote per company" rule, and a requirement that prospective participants be given the opportunity to enter/exit and fund projects at various stages.

- TIA also urges the FCC to direct non-accredited entities that are engaged in the development of industry-wide standards or generic requirements to adopt practices similar to those employed by TIA and other accredited bodies which encourage early disclosure of relevant intellectual property claims and require the reasonable, non-discriminatory licensing of technology incorporated into standardization documents adopted by such groups.

- TIA believes that parties seeking to have the requirements of Sections 273(d)(3) or (d)(4) removed should bear the burden of demonstrating that such action is appropriate, and be required to provide appropriate documentation demonstrating that there are other sources providing commercially viable alternatives to the applicant's standards, generic requirements, or certification services, which are in fact used within the industry.

**BOC EQUIPMENT PROCUREMENT**

- TIA believes that the procurement requirements of Section 273(e) apply to all BOCs, not merely those authorized to engage in manufacturing, through a separate affiliate, pursuant to Section 273(a).

- In implementing Section 273(e)(1)(A), a BOC must do more than merely announce that its procurement process is open to "unrelated persons." The requirements of Section 273(e)(1)(B) and (e)(2) explicitly require the BOCs to affirmatively avoid discrimination and make procurement decisions based on an "objective assessment" of the relative merits of products produced by "related" and "unrelated" persons.

- TIA agrees that the language of Section 273(e)(1)(B) unequivocally bars any form of discrimination in favor of equipment produced or supplied by a BOC "affiliate" or "related person." For purposes of this section, the latter term should be defined to include all BOC "affiliates," as well as any supplier in which a BOC has a material financial interest that gives it a direct and continuing share of the supplier's business or revenues.

- In implementing Section 273(e)(2)'s requirement that BOC procurement decisions be made "on the basis of an objective assessment of price, quality, delivery, and other commercial factors," the Commission should adopt an inclusive construction of the terms "equipment" and "software."

- TIA again urges the Commission to direct each BOC to develop and secure FCC approval of plans describing the standards and procedures to be employed by the BOC, in order to ensure compliance with the non-discrimination requirements and other non-structural safeguards established in Sections 272 and 273

- TIA agrees with the Commission that traditional, complaint-based enforcement mechanisms are likely to be inadequate, and urges the adoption of appropriate reporting and record retention requirements, to ensure that the information needed for effective monitoring and enforcement is readily available.

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## COMMENTS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION

The Telecommunications Industry Association ("TIA"), by its attorneys, hereby submits its comments in response to the Notice of Proposed Rulemaking ("NPRM") in the above-captioned proceeding, in which the Commission will establish rules implementing the provisions of Section 273 of the Communications Act, as amended.[1]

## I. INTRODUCTION [NPRM ¶¶ 1-7]

TIA is a national trade association whose membership currently includes over 600 manufacturers and suppliers of all types of telecommunications equipment, customer premises equipment ("CPE"), and related products and services.[2] TIA's members are located throughout the United States, and collectively provide the bulk of the physical plant and associated

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1 Notice of Proposed Rulemaking, In the Matter of Implementation of Section 273 of the Communications Act of 1934, as amended by the Telecommunications Act of 1996, FCC 96-472, 62 Fed. Reg. 3638 (January 24, 1997).

2 TIA recently announced its intent to merge with the Multi-Media Telecommunications Association ("MMTA," formerly the North American Telecommunications Association or "NATA"). Following the merger, the combined association will include over 1,000 small and large companies.

equipment, software, and services used to support and improve the nation's telecommunications infrastructure. In addition, TIA's member firms have enjoyed increasing success in marketing their products and related services in other developed and developing nations around the world, thereby contributing to the increasingly substantial U.S. trade surplus in sales of telecommunications equipment.[3]

As the Commission's NPRM recognizes[4], implementation of the AT&T Consent Decree, the so-called Modification of Final Judgment or "MFJ,"[5] has had a profound and overwhelming positive impact on the telecommunications equipment industry in the United States. AT&T's divestiture of the Bell Operating Companies ("BOCs"), coupled with the MFJ prohibition on BOC entry into manufacturing, created an environment in which all manufacturers have been given the opportunity to compete on the merits for sales to the BOCs and other potential customers. The more open, competitive environment which emerged under the MFJ has yielded enormous benefits to American consumers, the domestic equipment industry, and the U.S. economy, in the form of lower prices, improved quality, and an ever-expanding array of innovative new products, many of them manufactured by firms which did not even exist at the time the MFJ was entered. The dramatic improvement in the U.S. balance of trade in telecommunications equipment over the past 12 years reflects the substantial impact which the MFJ has had in the growth and development of a robust, dynamic, globally competitive domestic

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3 See footnote 6, infra.

4 NPRM, Paragraph 4.

5 Modification of Final Judgment, United States v. Western Electric Co., 552 F. Supp. 131 (D.D.C.) 1982, aff'd sub nom., Maryland v. United States, 460 U.S. 1001 (1983).

equipment industry.[6] TIA's primary interest in this proceeding is to assist the Commission in ensuring that Section 273 and other related provisions of the 1996 Act are implemented in a manner which preserves these benefits, and prevents the return of practices similar to those which served to limit competition for so many years prior to entry of the MFJ.[7]

In its NPRM, the Commission notes that "Section 273 permits BOCs to engage in manufacturing if certain requirements are met that are designed to promote competition and prevent anticompetitive behavior. . . ."[8] The Commission goes on to observe that Section 273 seeks to "facilitate BOC entry into manufacturing while preserving the competitive nature of [telecommunications equipment and CPE] markets only after the BOC: 1) has been authorized to provide inter-LATA service pursuant to Section 271(d). . ., 2) has established a separate subsidiary that complies with Section 272. . ., and 3) has met the requirements of Section 273. . . ."[9]

The structural and non-structural safeguards established in Sections 272 and 273 are designed to constrain the potential for cross-subsidization and other anticompetitive practices

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6 A review of the Commerce Department's annual trade figures reveals that since the AT&T Consent Decree was announced and implemented, the U.S. balance of trade in telecommunications equipment has improved from a $830 million deficit in 1984 to a $4.3 billion surplus in 1996.

7 As the Commission has observed, disputes with respect to the adverse impact of various pre-divestiture Bell System practices on competition in the manufacture and sale of telecommunications equipment and CPE led to two major government antitrust suits (as well as a large number of private suits) which "spanned most of the last 50 years." NPRM, Paragraph 2.

8 NPRM, Paragraph 1. [Emphasis added]

9 Id., Paragraph 4.

of the sort cited by the Commission in its NPRM,[10] including discrimination in procurement, standards-setting and certification activities, and in the provision of access to information that affects the ability of manufacturers to design and sell equipment for use in or connection to the BOCs' networks. As the Commission has recognized, BOC entry into manufacturing raises significant concerns with regard to self-dealing and other anticompetitive practices, notwithstanding the fact that a BOC has satisfied the market-opening requirements of Section 271(d)(3).[11] Compliance with these "checklist" requirements merely serves to establish a foundation for the development of competition in the BOCs local service markets.[12] Accordingly, the statutory scheme relies on the manufacturing-specific safeguards established in Section 273, together with the "generic" safeguards contained in Section 272, to contain the potential for anticompetitive behavior arising from the BOCs' position as the dominant providers of local services within their respective areas[13] "until facilities-based alternatives to the local exchange and exchange access services of the BOCs make those safeguards no longer necessary."[14]

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10 See NPRM, Paragraphs 2-4.

11 See First Report and Order, In the Matter of Implementation of Sections 271 and 272 of the Communications Act, as amended, FCC 96-489 (released December 24, 1996) ("Non-Accounting Safeguards Order"), Paragraphs 10-11.

12 Id., Paragraph 9, citing Congress' recognition, in enacting Section 272, that "the local exchange market will not be fully competitive immediately upon its opening" and noting that the "generic" safeguards established in Section 272 "are designed, in the absence of full competition in the local exchange marketplace, to prohibit anticompetitive discrimination and cost-shifting, while still giving consumers the benefit of competition." [Emphasis added]

13 As the Commission has observed, "BOCs currently are the dominant providers of local exchange and exchange access services in their in-region states, accounting for

TIA firmly believes that the potential risks of cross-subsidy and discrimination in procurement and other areas are real and substantial, given the current, immature state of competition in the BOCs' local exchange markets. Currently, the BOCs remain the leading purchasers of many types of equipment. Moreover, impending structural changes in the industry involve the proposed consolidation of several of the industry's largest equipment purchasers. Consequently, the risks to competition arising from BOC entry into manufacturing are likely to increase in the near term, rather than diminish. Moreover, recent announcements by several of the more significant potential BOC competitors indicate that the deployment of alternative facilities-based networks is at best likely to proceed at a significantly slower pace than was anticipated at the time the 1996 Act was enacted.[15]

Given these developments, TIA believes it is all the more critical that the Commission, in implementing the provisions of Section 273 and other relevant sections of the Act,[16] make every effort to see that its rules address the full range of risks to competition in the

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approximately 99.1 percent of the local service revenues in those markets." Id., Paragraph 10.

14 Id., Paragraph 13.

15 See e.g., Reed E. Hundt, Chairman, FCC, The Hard Road Ahead -- An Agenda for the FCC in 1997 (released December 26, 1996) at 2 and sources cited therein.

16 TIA has been an active participant in the Commission's rulemaking proceedings implementing the "generic" accounting and non-accounting safeguards established in Section 272 (CC Docket Nos. 96-149 and 96-150). In its comments herein, TIA has attempted to give appropriate recognition to the interrelationship between the "manufacturing-specific" requirements established in Section 273 and the "generic" safeguards contained in Section 272, which impose independent obligations on the BOCs that complement and in certain areas reinforce the provisions of Section 273.

area of manufacturing in an effective, comprehensive manner. In developing its comments and the proposed rules appended hereto, TIA has attempted to lay out a framework for the construction, implementation, and enforcement of each of the relevant provisions, in a manner consistent with the language and the purposes of Section 273 and the 1996 Act, taken as a whole. TIA looks forward to working with the Commission throughout the course of this proceeding to develop appropriate rules that provide clear guidance to the industry and that operate effectively to ensure that the benefits of a fully competitive equipment marketplace are preserved.

## II. BOC MANUFACTURING AUTHORIZATION [Section 273(a); NPRM, ¶¶ 8-10]

### A. Timing of BOC Entry [NPRM ¶ 8]

While Section 273(a) does not explicitly address this issue, the language and legislative history of this provision appear to support the Commission's tentative conclusion that "Section 273(a) allows a BOC to manufacture and provide telecommunications equipment and to manufacture CPE, in compliance with the rules we adopt in this proceeding, once that BOC has obtained authority to offer interLATA service [under Section 271(d)] in any of its in-region states."[17] As the discussion above indicates, a BOC is likely to retain its dominant position in local services (and its attendant ability to impede competition in manufacturing and other related markets) for some time after it has received authority to offer in-region interLATA services under Section 271(d). Moreover, assuming that the FCC's reading of Section 273(a) is correct, a BOC could receive manufacturing authority without having satisfied the market-opening "checklist" requirements of Section 271(d)(3) for more than one of the states in which it operates. In light of

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[17] NPRM, Paragraph 8. [Emphasis added]

the possibility that a substantial portion of a BOC's region would not have satisfied even these initial market-opening requirements, it is all the more essential that the Commission adopt strong, well-crafted rules implementing the statutory safeguards established in Section 273, which are designed to constrain the potential for anticompetitive behavior, in the absence of effective marketplace constraints on the BOCs' ability and incentive to engage in such behavior.

### B. Joint Manufacturing Prohibition [NPRM ¶9]

In its NPRM, the Commission tentatively concludes that Section 273(a) bars joint manufacturing between or among: 1) unaffiliated Regional Holding Companies ("RHCs"); 2) unaffiliated BOCs that are not under the ownership or control of a common RHC; and 3) an RHC and a BOC that is not affiliated with that RHC.[18] The Commission's tentative conclusion appears to identify some but not all of the relationships covered by the joint manufacturing prohibition. By its terms, Section 271(a) also bars joint manufacturing between or among "affiliates" of unaffiliated BOCs, as well as joint manufacturing between or among an "affiliate" of one BOC and otherwise unaffiliated BOCs or RHCs.[19]

### C. Definition of "Manufacturing" [NPRM ¶10]

TIA agrees with the FCC's tentative conclusion that the term "manufacture" should be construed in a manner consistent with the definition of "manufacturing" adopted in Section

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[18] NPRM, Paragraph 9.

[19] It should be noted that pursuant to Section 272(a) of the Communications Act, 47 U.S.C. § 272(a), a BOC may not engage in "manufacturing" except through a "separate affiliate." See discussion of Section 273(b) in Section III, infra. Accordingly, a BOC may not participate in any "joint" manufacturing activities except through a "separate affiliate," in accordance with the requirements of sections 272 and 273.

273(h), which encompasses all of the activities identified in the relevant court rulings defining the term "manufacturing" for purposes of the MFJ.[20] As the Commission's NPRM indicates,[21] the MFJ manufacturing restriction was construed by the courts to encompass not only the fabrication of telecommunications equipment and CPE, but also the design and development of hardware and software integral to such products.

The investment made by an equipment manufacturer in software development is an increasingly critical factor in determining its competitiveness in the market, both in terms of price and product differentiation. Over time, software has become an increasingly significant component of manufacturing design. For that reason, it is important to ensure that, in establishing rules to implement the competitive safeguards established in Section 273, the Commission addresses the competitive significance which software has today and will increasingly have in the years ahead. Toward this end, TIA believes that the Commission must clearly delineate the types of software activities that are encompassed by the term "manufacturing" and which, therefore, must be conducted through a separate affiliate.[22]

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20 NPRM, Paragraph 10.

21 Id.

22 In an attempt to avoid uncertainty with respect to the proper classification of software activities undertaken by a BOC and its affiliates, TIA previously suggested that the FCC require that all software activities undertaken by a BOC and its affiliates, including Bellcore, be conducted through a separate affiliate. See TIA Initial Comments, CC Docket No. 96-149 (filed August 15, 1996) at 15. While this approach is simpler to administer, TIA believes that the approach proposed herein also will prove administratively feasible, while providing the BOCs with greater flexibility regarding their current software activities.

The 1996 Act explicitly defines the terms telecommunications equipment and CPE to a significant degree in terms of the functions they perform. The definition of "telecommunications equipment" encompasses hardware and software essential to the function of providing a telecommunications service.[23] The term "customer premises equipment" refers to equipment employed on the premises of a person (other than a carrier) "to originate, route, or terminate telecommunications."[24]

Software used in conjunction with hardware that performs the functions of "telecommunications equipment" is itself essential to the operation of the product in providing telecommunications service, e.g., without such software, the product would be incapable of real time call processing.[25] Software makes the hardware of telecommunications equipment work.[26] Similarly, CPE software is as much a part of the manufacturer's overall product design and development activities as physical design, electrical circuit layout, or radio frequency design. It is

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23 See 47 U.S.C. § 153(50).

24 47 U.S.C. § 153(38).

25 The functions necessary to provide real time call processing, i.e., the carriage of a voice signal through the telecommunications network, include 1) transmission, 2) switching and 3) signaling. Equipment that provides these functions would include, at a minimum, channel banks, multiplexers, cross-connect systems, subscriber loop carrier systems, repeaters or regenerators, central office and tandem switches, and signal transfer points ("STPs"). Test equipment used to verify the integrity or quality of the performance of those functions would also be included.

26 Any piece of hardware and software that performs the functions of telecommunications equipment must be included in the definition, regardless of whether it also performs functions other than those associated with telecommunications equipment.

integral to the performance of the functions of the particular product or products, whether it is built into the product or otherwise affects its functionality.

As the MFJ Court recognized, the manufacture of either type of equipment encompasses the software, as well as the hardware, that is employed to perform the functions of the product in question. As the District Court observed, in its opinion defining the term "manufacturing":

> It is part of manufacturing design to decide how to make a product, by means of hardware, software, or a combination of both, that will do the job asked of it by the functional specifications set out by a Regional Company. Given that these companies may not manufacture the hardware for telecommunications products, there is no basis of supposing that they may design or develop the algorithms which make the hardware work.[27]

The algorithms are integral to the functioning of central office switches, transmission systems, signaling equipment and other types of equipment. They can be encoded in integrated circuits and embedded in the hardware, referred to as "firmware." The same algorithms can be stored in magnetic or other media and are called "software." In either event, the algorithms are integral to the design and functioning of the particular piece of equipment. In the case of CPE, software may be embedded in the microprocessor(s) that are physically part of the product. It also may be specially designed for and unique to one or more CPE products, and provided separately or as an upgrade to the CPE. Again, in either event, the software is integral to the design and functioning of the hardware.

To establish a clear rule, the Commission should adhere to the MFJ's court's unequivocal conclusion that the development of any firmware or software for hardware that

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[27] United States v. Western Electric Co., 675 F.Supp. 655, 667 n.54 (D.D.C. 1987).

performs the function(s) of telecommunications equipment or CPE is "integral" to that equipment and permit such development to be undertaken by a BOC only through the BOC's manufacturing affiliate. This approach will give the BOCs the greatest degree of certainty and provide the Commission with an enforceable rule.

Under the MFJ, the BOCs were permitted to engage in the development of Operations Support Systems ("OSS"), which are used to perform various functions relating to the design, maintenance, and operation of the BOCs' local exchange networks. While software development of this nature by the BOCs is permitted today and need not be undertaken through a separate affiliate, TIA urges the Commission to require that all OSS software be separated from network equipment by either an accepted industry standard or vendor-established proprietary interface that is published or otherwise made known to customers and manufacturers and which ensures that commands passed over that interface do not in any way impact the completion of individual calls on the network.

Similarly, software is developed by the BOCs for databases found in today's telephone network that are used in delivering services, called Service Control Points ("SCPs"). These databases are the repository for all customer network service information for what are sometimes called "intelligent network" services. SCPs respond to queries from the switch regarding specific call routing information and interact with telecommunications equipment by way of defined interfaces. This call routing information does not establish the call path. Rather, it is the telecommunications equipment, typically the switch, that interprets the information received from the SCP and performs certain algorithms and operations in order to send the proper signaling messages and establish the call path. Since SCPs do not perform the functions of "telecommunications equipment," software resident on SCPs is not integral to the manufacture of

telecommunications equipment. However, as with OSS, SCPs should communicate with telecommunications equipment via defined interfaces.

## III. BOC COLLABORATION, RESEARCH, AND ROYALTY AGREEMENTS [Section 273(b); NPRM ¶¶ 11-12]

### A. Close Collaboration [Section 273(b)(1); [NPRM ¶ 11]

In its NPRM, the Commission invites comment on the proper construction of Section 273(b)(1), which provides that a BOC may engage in "close collaboration" with any manufacturer of telecommunications equipment or CPE "during the design and development of hardware, software, or combinations thereof related to such equipment."[28] While the term "close collaboration" is not defined in the statute, the language and history of Section 273(b)(1) indicates that this provision was designed to respond to concerns that the definition of "manufacturing" adopted by the courts was unduly vague and had an inhibiting effect on the BOCs' ability to communicate their equipment needs to potential suppliers and ensure that products developed for installation in or connection to the network are suitable for such use. As TIA indicated in its response to reply comments submitted in CC Docket No. 96-149, Section 273(b)(1) was merely intended to alleviate any confusion or uncertainty with regard to the BOCs' ability to interact with manufacturers who are engaged in the "design and development of hardware, software, or combinations thereof," to ensure that the products designed by the manufacturer interconnect and interoperate effectively with the BOC's network.[29] The language, legislative history, and

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[28] 47 U.S.C. § 273(b)(1).

[29] See TIA Ex Parte Presentation, CC Docket No. 96-149 (filed November 26, 1996) at 4-7.

underlying purposes of Section 273 and related sections, e.g., Section 272(a), indicate that this provision does not and should not be construed as providing the BOCs themselves with authority to "engage directly in the design process," as at least one Regional Bell Operating Company ("RBOC"), US West has asserted.[30] Indeed, to construe Section 273(b)(1) in this manner clearly would undermine the structural safeguards established in Section 272, which explicitly requires that all BOC "manufacturing" activities, without exception, are to be conducted through the BOC's separate affiliate.[31]

Properly construed, then, this provision allows a BOC to work closely with manufacturers to develop generic specifications and engage in other cooperative activities (e.g., product testing) which do not constitute "manufacturing," in order to ensure effective interconnection and interoperation of products designed for use in or connection to the BOC's network.[32] Consistent with the statutory scheme, all activities undertaken by a BOC pursuant to

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30 Id. at 5, citing U S West Reply Comments, CC Docket No. 96-149 (filed August 30, 1996) at 24. Significantly, the language of Section 273(b)(1) by its terms does not authorize a BOC to collaborate in the manufacturer's design process, but rather refers to collaboration "during [i.e., at the time a manufacturer is engaged in] the design and development of hardware, software, or combinations thereof."

31 See 47 U.S.C. § 272(a). In contrast to the unqualified manufacturing "separate affiliate" requirement adopted in Section 272(a)(2)(A), the language adopted by Congress in Section 272(a)(2)(B) and (C) includes explicit provisions exempting certain types of interLATA and information services from compliance with the separate affiliate requirement.

32 See Report of the Committee on Commerce, Science, and Transportation on S. 652, S.Rpt.No. 104-230 at 46, noting that "close collaboration [between the BOCs and manufacturers] is necessary to permit the interconnection of networks and the interoperability of equipment . . . ."

In its NPRM, the Commission tentatively concludes that Section 273(a) bars collaboration 1) between a BOC or RHC and the manufacturing affiliate of another unaffiliated

Section 273(b)(1) must be conducted in a manner consistent with the structural separation requirements and non-discrimination safeguards established in Sections 272 and 273. In this regard, a BOC engaged in such activities must comply with the information disclosure requirements established pursuant to Section 273(c), as well as the non-discrimination requirements of Section 272(c)(1). Under the latter provision, any "goods, services, facilities, or information" provided by a BOC to its manufacturing affiliate in the course of activities undertaken pursuant to Section 273(b)(1) must be made available to unaffiliated entities on a non-discriminatory basis.[33]

### B. BOC Research, Royalty Agreements [Section 273(b)(2); NPRM ¶ 12]

In order to preserve the integrity of the statutory scheme, and to minimize BOC incentives to engage in anticompetitive practices, the language in Section 273(b)(2) allowing the BOCs to engage in "research activities" and enter into "royalty agreements" with manufacturers should be narrowly construed. Section 273(b)(2)(A), by its terms, authorizes only research

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BOC/RHC; and 2) between manufacturing affiliates of two unaffiliated BOCs/RHCs, but permits collaboration between a BOC affiliated manufacturer and non-BOC affiliated manufacturer. NPRM, Paragraph 11. Assuming that Section 273(b)(1) is properly construed, in a manner consistent with the foregoing discussion, TIA believes that a BOC may engage in "close collaboration" with any manufacturer, including the BOCs' own Section 272 separate affiliate or the separate affiliate of any other affiliated or unaffiliated BOC or RHC. Again, this assumes that the BOC's collaborative activities do not constitute "manufacturing." See discussion above.

[33] In its First Report and Order in CC Docket No. 96-149, the Commission declined to narrow the scope of the terms "goods, services, facilities, and information." See Non-Accounting Safeguards Order, supra, n.11, Paragraph 216. Accordingly, the BOCs' obligations clearly include any and all goods, services, facilities, or information provided by a BOC to its affiliate that relate to or may affect the design, development, fabrication, sale, interconnection, or interoperability of telecommunications equipment, CPE, software (of all types), and related services.

activities that are or may be "related to manufacturing"; it does not authorize the BOC to engage in "manufacturing," as that term was construed by the courts under the MFJ. As the FCC emphasized in its recent order in CC Docket No. 96-149, "to the extent that research and development is a part of manufacturing, it must be conducted through a Section 272 affiliate. . . ."[34]

Accordingly, Section 273(b)(2) allows a BOC to conduct basic and applied research of a "generic" nature, even where the results of such research may subsequently be utilized in the manufacture of telecom equipment or CPE. However, any product-specific R&D must be undertaken only through the BOC's separate affiliate. This construction of Section 273(b)(2)(A) is consistent with both the language and legislative history of the 1996 Act, which reflects the deletion of language contained in the Senate bill that would have explicitly authorized the BOCs themselves to engage in "design activities related to manufacturing."[35]

The NPRM observes that while the terms "research activities" and "royalty agreements" as used in Section 273(b)(2)(A) and (B) are not defined in the statute, "the terms are related," in the sense that the receipt of royalties provides a basis for compensation for the use of intellectual property created as a result of "research" activities.[36] In light of this relationship, the term "royalty agreements" should be construed for purposes of Section 273(b)(2)(B) as referring

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34 Non-Accounting Safeguards Order, supra, n.11, Paragraph 169.

35 Proposed Section 256(a)(2)(A) of the Senate Bill, S. 652, would have explicitly authorized the BOCs to engage in "research and design activities related to manufacturing" upon enactment.

36 NPRM, Paragraph 12.

to agreements that provide for the licensing of intellectual property and related technical information arising from permissible (i.e., "generic") BOC research activities, in return for a fee designed to allow the BOC to help recoup its investment and realize a reasonable profit.[37] However, as the Commission's NPRM recognizes, allowing a BOC to collect royalties "could potentially create some of the same anticompetitive incentives that would be created if the BOCs themselves engaged in manufacturing directly."[38] In particular, the NPRM notes that "if the BOC's royalty is paid per unit of sales, or tied to the purchase price of the equipment, the BOC may have substantial incentives to favor equipment on which it can collect a royalty, even if such equipment is inferior to competing equipment in quality or higher in price. . . ."[39] Accordingly, the Commission should define the scope of this provision to exclude arrangements which provide for the receipt by a BOC or BOC affiliate of royalties that are tied to the BOC's own purchases of equipment from licensed manufacturers.

The Commission also should make it clear that a BOC is not permitted to license technology developed pursuant to Section 273(b)(2)(A) to an affiliate for use in the design of telecommunications equipment or customer premises equipment until the requirements for entry into manufacturing have been satisfied. Pursuant to Section 272(c)(1), where a BOC thereafter licenses intellectual property and/or other technical information to its manufacturing affiliate, such

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37 This definitional approach is consistent with the accepted use of the term "royalty" in this context. See e.g., Webster's New Twentieth Century Dictionary Unabridged (2nd Ed.) at 1582, defining the term "royalty" as "a share of the proceeds or product paid to the owner of a right, as a patent, for permission to use or operate under it."

38 NPRM, Paragraph 12.

39 Id.

arrangements must be available to all manufacturers on a non-discriminatory basis. In addition, any technical information that falls within the scope of the BOC's obligations under Section 273(c) or other sections of the Communications Act must be disclosed in a non-discriminatory manner, consistent with the requirements of that section.

Where the BOCs are engaged in permissible joint research projects with manufacturers, i.e., projects which do not involve "manufacturing" activities as defined in Section 273(h), the Commission should take steps to ensure that such ventures are not conducted in a manner inconsistent with the provisions and purposes of Section 273 and other relevant Communications Act provisions. If it is determined that a BOC may engage in joint research activities which do not constitute manufacturing with its separate affiliate, the Section 272(c)(1) non-discrimination provisions would appear clearly to require that any "goods, services, facilities or information" provided by the BOC to its separate affiliate in the course of such activities must be made available to other manufacturers on a non-discriminatory basis. While the treatment of intellectual property resulting from joint research activities would appear somewhat less explicit, TIA believes that in order to reduce the potential for cross-subsidization and discrimination, the Commission should make it clear that any intellectual property arising from permissible research activities undertaken by a BOC with or on behalf of its separate affiliate must be made available to all manufacturers on reasonable, non-discriminatory terms and conditions.[40] In addition, a BOC that participates in a research joint venture must conduct such activities in a manner consistent

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[40] In addition to Section 272(c)(1), the Commission clearly has the authority to adopt such a requirement pursuant to Section 273(g) of the Act, in order to "prevent discrimination and cross-subsidization in a [BOC's] dealings with its affiliate and with third parties." 47 U.S.C. § 273(g).